

CLAIMS

1. An actuator comprising a tubular portion extending in a longitudinal direction, the tubular portion comprising a body of an elastomeric material arranged between two electrodes, wherein any line of symmetry extending between two opposite points on a periphery in a cross-section perpendicular to the longitudinal direction has a length which is different from any other such line of symmetry.
2. An actuator according to claim 1, wherein the tubular portion is formed by rolling up a sheet comprising at least two elements each comprising a body of an elastomeric material and an electrode attached to a first surface thereof, wherein deformation of the body is restricted in a first direction and supported in a another, second, direction.
3. An actuator according to claim 2, wherein the second direction is parallel to the longitudinal direction.
4. An actuator according to claims 2-3, wherein the first direction is perpendicular to the second direction.
5. An actuator according to any of claims 2-4, wherein the body and the electrode comprise corrugations extending in the first direction.
6. An actuator according to any of claims 2-5, wherein the sheet comprises:
- an element of a first type comprising a conductive terminal of a first type being in electrical contact with the electrode of the element
 - an element of a second type comprising a conductive terminal of a second type being in electrical contact with the electrode of the element,
- wherein the conductive terminal of the first type is electrically isolated from the conductive terminal of the second type when the elements are stacked.
7. An actuator according to any of claims 2-6, wherein the:
- element of the first type further comprises a conductive terminal of a second type being electrically isolated from the electrode of the element, and wherein

- the element of the second type further comprises a conductive terminal of a first type being electrically isolated from the electrode of the element,

wherein the conductive terminals of the first type are in mutual electrical contact and the conductive terminals of the second type are in mutual electrical contact when the elements are stacked.

- 5
8. An actuator according to claims 6-7, wherein the conductive terminals of the first type cover a first peripheral rim portion of the body of an elastomeric material, and the conductive terminals of the second type cover a second peripheral rim portion of the body of an elastomeric material.
- 10
9. An actuator according to claims 6-8, wherein elements of the first type are arranged alternately elements of the second type.
10. An actuator according to any of claims 2-9, wherein the tubular portion is formed by rolling of the sheet around a core of an elastomeric material.
11. An actuator according to any of the preceding claims, wherein the tubular portion is filled with a core of an elastomeric material.
- 15
12. An actuator according to claim 11, wherein the core is softer than the elastomeric material forming the tubular portion.
13. An actuator according to claims 11-12, wherein the core is made by filling a cavity limited by the tubular portion and two closure parts with a liquid elastomer material which is subsequently hardened while the tubular portion is stretched axially.
- 20
14. A method of making a rolled elastomer actuator, said method comprising the steps of:
- 25
- forming a sheet from layers of elements, each comprising a body of an elastomer material and an electrode in contact with a surface of the body,
 - rolling up the sheet to form a hollow tubular portion with a shape wherein any line of symmetry extending between two opposite points on a periphery in a cross-section perpendicular to the longitudinal direction has a length which is different from any other such line of symmetry.

13

15. A method according to claim 14, wherein the tubular portion is filled with a liquid elastomer material which is subsequently hardened to form an elastomer core for the tubular portion.

5